

08CS5682-1

REMARKS

Before substantively addressing the Office Action, it is requested that the Examiner provide an initialed copy of the Information Disclosure Statement (IDS) facsimiled to the Office on September 6, 2004. Applicants' undersigned representative has not received an initialed copy of the IDS and respectfully requests that the Examiner provide one with the next Advisory Action or Notice of Allowance, whichever is applicable.

Claims 1-22 were pending in the present Application. Reconsideration and allowance of the claims are respectfully requested in view of the following remarks.

First Claim Rejection Under 35 U.S.C. § 103(a)

Claims 1-5, 7-10, 12, 14-17, and 19-22 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over US Patent No. 4,735,978 to Ishihara (hereinafter "Ishihara") in view of US Patent No. 3,956,538 to Vartiak (hereinafter "Vartiak") or US. Patent No. 6,547,605 to Schaffner (hereinafter "Schaffner"). Applicants respectfully traverse this rejection.

Independent Claims 1, 16, 19 and 21 are directed to processes related to fire resistant polycarbonate compositions comprising, *inter alia*, compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition.

Ishihara is generally directed to a flame retardant polycarbonate composition. The polycarbonate composition generally includes, in admixture, an aromatic polycarbonate resin, an ortho-methyl substituted aromatic dihydroxy compound, and an additional flame retardant additive, with the ortho-methyl substituted aromatic dihydroxy compound and the additional flame retardant additive being present in an amount sufficient to improve flame resistance. The mixture is dry blended and as noted by the Applicants in its background, the KSS functions similar to a filler material, which contributes to haze in the final extruded product.

Vartiak is generally directed to a method of rendering a surface, typically of a railroad

08CS5682-1

right-of-way or siding, flame retardant by sequentially spraying two solutions of two different flame retardants onto the surface. There is no teaching or suggestion of adding the solutions to a polymer during an extrusion process to produce flame-retarded compositions. Moreover, the solutions as noted above are topically applied.

Schaffner is directed to a flame resistant buffering wheel, wherein flame resistance is achieved by treating the buffering wheel with a flame retardant solution. In this case, the buffering material, typically containing cotton, polyester/cotton blend, or sisal, is dipped or immersed into the solution so as to allow the flame retardant to "wet" the buffering material. There is no disclosure or suggestion of adding the flame retardant solutions to a polymer during an extrusion process.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q. 2d, 1016, 1023 (Fed. Cir. 1996).

The cited references fail to establish a *prima facie* case of obviousness because the cited references fail to teach or suggest, individually or in combination, compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition. As acknowledged by the Examiner, Ishihara discloses and suggests dry blending a flame retardant with a polycarbonate composition. There is no disclosure or suggestion for compounding an aqueous flame retardant solution with the polycarbonate. As noted by the Applicants, compounding with the aqueous flame retardant solution with polycarbonate unexpectedly reduced haze, reduced the number of inclusions,

08CS5682-1

and reduced coloration in the final product. In fact, Applicants made a direct comparison of a polycarbonate sheet product compounded with a solid flame retardant and polycarbonate sheet products compounded with an aqueous flame retardant solution (see Applicant's Specification, Table 1). The results provided clearly show the unexpected and superior properties resulting from the Applicants' process.

The secondary references fail to compensate for the deficiencies of Ishihara. Although the secondary references disclose the use of flame retardant solutions, there is no teaching or suggestion of compounding the flame retardant solution with polycarbonate. Varitiak teaches and discloses the *topical* application of a flame retardant solution onto a surface, and in particular, to railroad cars. Spray drying a surface via topical application with the flame retardant solution is not the same as compounding.

Schaffner discloses and suggests *dipping or immersing* a cotton buffing material into a flame retardant solution. As such, Schaffner teaches and suggests the use of absorption to facilitate flame retardancy. Dipping or immersing is not the same as compounding. Moreover, if modified as suggested by the Examiner, the modification of Schaffner would likely not result in any expectation of success. Since Schaeffer relies on absorption, it is not expected that the flame retardant solution would absorb onto polycarbonate to any significant degree. At least no to the degree that would render the resulting product flame retardant.

Thus, a combination of the cited references would result in treating Ishihara's polycarbonate composition by spraying it with the flame retardant solution or dipping it in a flame retardant solution. Moreover, as noted in MPEP §2143.02, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teaching so the referenced are not sufficient to render the claims *prima facie* obviousness. In the present case, the modification of Ishihara as taught by the secondary references would undoubtedly change the operation thereof with regard to the process. Accordingly, the cited references, individually or in combination, fail to teach or suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition".

08CS5682-1

In view of the foregoing, the rejection applied to Claims 1-5, 7-10, 12, 14-17, and 19-22 is requested to be withdrawn.

Second Claim Rejection Under 35 U.S.C. § 103(a)

Claim 6 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ishihara in view of Vartiak or Schaffner as applied to Claim 1 in the First Claim Rejection Under 35 U.S.C. § 103(a) above, and further in view of US Patent No. 6,518,347 to Boyd et al (hereinafter "Boyd"). Applicants respectfully traverse this rejection.

Boyd is directed to a flame retardant carbonate polymer composition. The carbonate polymer contains a flame retardant additive comprising metal salts of a highly fluorinated methide, amide, or imide anion, of which potassium perfluorobutane sulfonate is disclosed. As noted in Boyd, "shaped articles (e.g., molded, cast or extruded articles) of this invention can be made, e.g., by blending or otherwise uniformly mixing an effective amount of the additive and the polymer, for example by intimately mixing the additive with pelletized or powdered polymer, and melt extruding the mixture into shape articles....". As such, like Ishihara above, Boyd teaches and suggests compounding by dry blend of the ingredients.

Claim 6 depends from Claim 1, and as such, this claim includes all of the limitations of Claim 1. Thus, Claim 6 is directed to a process for producing a fire resistant polycarbonate compositions comprising compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition. As previously discussed, any combination of Ishihara with Vartiak and Schaffner that is used to render Claim 1, and by extension Claim 6, obvious cannot be relied upon. Consequently, any additional prior art (e.g., Boyd), must compensate for the deficiencies of Ishihara. None of the cited references teach or suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition".

Accordingly, Applicants request the rejection of Claim 6 be withdrawn.

08CS5682-1

Third Claim Rejection Under 35 U.S.C. § 103(a)

Claim 11 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ishihara in view of Vartiak or Schaffner as applied to Claim 1 in the First Claim Rejection Under 35 U.S.C. § 103(a) above, and further in view of US Patent No. 6,174,944 to Chiba et al (hereinafter “Chiba”). Applicants respectfully traverse this rejection.

Claim 11 depends from Claim 1, and as such, is directed to a process comprising, *inter alia*, compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition.

Chiba is directed to flame retardant polycarbonate resin compositions, which contain, among others, additive components of fibrous fillers, surface-treating agents, and inorganic fillers. As noted in Chiba, “the method for producing the polycarbonate resin composition by mixing components (a) to (f) is not specifically defined, and any ordinary method is employable for producing it.” As such, Chiba fails to compensate for the deficiencies of the other references. That is, Chiba, like the other references, fails to teach or suggest “compounding an aqueous solution of a flame retardant salt with a polycarbonate composition” as claimed by Applicants.

Accordingly, Applicants request the rejection of Claim 11 be withdrawn.

Fourth Claim Rejection Under 35 U.S.C. § 103(a)

Claims 13 and 18 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ishihara in view of Vartiak or Schaffner as applied to Claims 1 and 16 in the First Claim Rejection Under 35 U.S.C. § 103(a) above, and further in view of US Patent No. 4,154,692 to McElveen (hereinafter “McElveen”). Applicants respectfully traverse this rejection.

Claims 13 and 18 depend from Claims 1 and 16 respectively, and as such, these claims include all of the limitations of Claims 1 and 16. Thus Claims 13 and 18 are directed to a process comprising, *inter alia*, compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition.

08CS5682-1

McElveen is directed to flame retardant solutions containing water and alcohol, and processes for making flame retardant fabrics and fibers, specifically cellulose acetate and cellulose triacetate, by *immersing* the fabrics or fibers in the flame retardant solutions. As such, like the Schaffner reference discussed above, McElveen relies on the absorptive properties of the fabric, which is markedly different from compounding.

Thus, a combination of references would result in treating Ishihara's polycarbonate composition by spraying or immersing or dipping the composition into the flame retardant solution. The references, individually or in combination, fail to teach or suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition" as claimed by Applicants.

Accordingly, Applicants request the rejection of Claims 13 and 18 be withdrawn.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862.

Respectfully submitted,

CANTOR COLBURN LLP



Peter R. Hagerty
Registration No. 42,618

Date: November 1, 2004
Customer No. 23413
Telephone (860) 286-2929
Facsimile (860) 286-0115